

REMARKS

Applicants respectfully request reconsideration of this application in view of the foregoing amendments and the following remarks.

Claim Status

Claims 1-20 are pending in this application. Claims 1-20 have been rejected. Claims 2 and 16 are herein canceled. Claims 1, 3, 4, 6, 15 and 17 are herein amended. No new matter has been added by these amendments.

Objections to the Drawings

The Examiner has objected to FIG. 14 as failing to comply with 37 C.F.R. § 1.84(p)(4) because reference character “M2” has been used to designate two transistors.

Applicants have amended FIG. 14 to correctly identify the two transistors. As amended, “M1” designates one transistor and “M2” designates the other transistor. In addition, the specification has been amended (at page 10, the paragraph commencing at line 19) to correctly reference the transistor “M1”. Reconsideration of this objection is respectfully requested.

Objections to the Specification

The disclosure has been objected to because of the following informality. On page 9, line 20 the term “switche” should be changed to “switches”. Applicants have amended the specification to correct the spelling of the term “switches”. Reconsideration of this objection is respectfully requested.

Rejections Under 35 U.S.C. § 112

Claims 1-14 have been rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements.

In particular, structural and/or functional connections between the filter and duty ratio controller were indicated as being omitted by the Examiner.

Claim 1 has been amended to recite,

A device for controlling a frequency response comprising:
a filter, wherein the filter generates an output signal after removing a frequency from an input signal, the filter comprising a first impedance component and a switch that is connected to the first impedance component, wherein the switch is switched on or off in response to a duty-controlled clock signal; and
a duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal, controls a duty ratio of a the clock signal, and generates a the duty-controlled clock signal.

As amended, claim 1 now recites the structural and/or functional connections between the filter and the duty ratio controller. Reconsideration of this rejection is respectfully requested.

Claims 5-13 have been further rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the limitations: “the first impedance component” and “the switch” of claim 5, “a second impedance component” of claims 6 and 7, “the first impedance component” of claim 8, “the first” of claim 9, “the duty control signal” of claim 10 and “the switch” of claims 11-13 were rejected for having insufficient antecedent basis.

The amendments to claims 1 and 6 are believed to provide sufficient antecedent basis for the aforementioned terms. Reconsideration of these rejections is respectfully requested.

Rejections Under 35 U.S.C. § 102(b)

Claims 15-18 and 20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,473,278 (Shibata).

Claim 15 of the present invention has been amended to recite,

A device for controlling a frequency response comprising:
a filter, wherein the filter generates an output signal after removing a frequency from an input signal, the filter comprising: an impedance component and a switch that is connected to the impedance component, wherein the switch is switched on or off by a duty-controlled clock signal wherein a frequency response of the filter varies in response to a duty ratio of a duty-controlled clock signal;
and
a duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal and generates the duty-controlled clock signal,
wherein a frequency response of the filter varies in response to a duty ratio of the duty-controlled clock signal.

In contrast to the present invention recited in claim 15, Shibata does not disclose a device for controlling a frequency response including at least “a duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal...” Instead Shibata discloses an RC filter circuit that includes a compensation circuit 40. The compensation circuit 40 receives a clock signal at a clock terminal 31 and outputs a signal from a node C having a pulse train, which has a cycle period equal to the clock signal, to a switch 5. The signal output from the node C is generated in response to the clock signal A being input directly to one input terminal of an AND gate and an inverted and time delayed version of the clock signal B being input to the other input terminal of the AND gate. The signal output

from the node C is not output in response to a “duty control signal for selectively adjusting the duty-controlled clock signal” as recited in claim 15.

Thus, because there is no disclosure in Shibata of “a duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal...” as recited in claim 15, Applicants believe the invention as recited therein is patentable over Shibata.

Independent claim 1 has been similarly amended and is believed to be allowable for at least the same reasons as claim 15.

Claims 15 and 19 were also rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,114,117 (Ford).

With regard to the rejection of claims 15 and 19 in view of Ford, because Ford does not disclose at least “a duty ratio controller, wherein the duty ratio controller receives a clock signal and a duty control signal for selectively adjusting the duty-controlled clock signal...”, as recited in claim 15, Applicants believe the invention as recited therein is patentable over Ford.

Dependent Claims


Applicants have not independently addressed the rejections of the dependent claims because Applicants submit that, in view of the amendments to the claims presented herein and, for at least similar reasons as why the independent claims from which the dependent claims depend are believed allowable as discussed, *supra*, the dependent claims are also allowable. Applicants however, reserve the right to address any individual rejections of the dependent claims should such be necessary or appropriate.

CONCLUSION

Accordingly, Applicants submit that the claims as herein presented are allowable over the prior art of record, taken alone or in combination, and that the respective rejections be withdrawn. Applicants further submit that the application is hereby placed in condition for allowance which action is earnestly solicited.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS

Attached, please find a replacement drawing for FIG. 14.